

INTERACTIONS OF HUMAN GINGIVAL FIBROBLASTS WITH TOBACCO TREATED PORPHYROMONAS GINGIVALIS

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Porphyromonas gingivalis (*P. gingivalis*) and tobacco are risk factors for periodontal disease. The objective of this study was to determine the effects that tobacco treated *P. gingivalis* cells have on human gingival fibroblasts (HGFs). The study was conducted to examine the effects that cigarette smoke condensate (CSC), nicotine, and dissolvable smokeless tobacco (DST) strips treated *P. gingivalis* has on cell cytotoxicity and the expression of cytokines and growth factors from HGFs. The *P. gingivalis* was grown at 37°C and then the cells and supernatant were separated. *P. gingivalis* cells were then washed and killed. The concentration of protein in the cell pellet and supernatant were determined by protein assay using the Bradford method. The lowest non-toxic levels of the cell pellet and supernatant will be used to treat the HGFs for 72 hours and then cytotoxicity was determined by lactate dehydrogenase (LDH) assays. The cytokine/growth factor expression will be determined by antibody protein arrays. The protein assays showed that the tobacco products reduced the protein amounts as compared to untreated bacteria. The results should show an increase in cytotoxicity with increasing protein concentrations, along with increased pro-inflammatory cytokine/growth factors expression by the HGFs treated with tobacco treated *P. gingivalis* compared to *P. gingivalis* that was not treated with tobacco products. A better understanding of the detrimental effects that tobacco has on the underlining causes of periodontal disease can advance the quest of controlling the disease.

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